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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,685	11/13/2003	Evgeniya Freydina	10168-7080.19	9109

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EXAMINER
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DRODGE, JOSEPH W

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 02/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/712,685	FREYDINA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Joseph W. Drodge	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____.  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>404,904, 1104,505</u> .   | 6) <input type="checkbox"/> Other: ____.                                    |

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Mani patent 6,017,433.

For claims 1-22, Mani discloses a water treatment system and method comprising point of entry (CI) , upstream pressurized tank or reservoir (184), electrodeionization type of electrochemical device (EDI-1) , power supply (col. 14, l. 51, controller means to adjust current supply, flow rates, pressures, etc. (col. 11, lines 32-59) downstream distribution system to end use point(s) ( see the flow lines of figure 4 and see column 1, lines 57-63 concerning distributing electrochemically treated water from first EDI unit through an ion exchange tank or 2<sup>nd</sup> EDI unit to distribute purified water product for uses (col. 5, l. 57-63), and water property sensors (again see col. 11).

For claims 2,8,9,12 the reservoirs and other components may inherently be pressurized since the system employs pressure gauges , see col. 11, l. 38-39 .

For claims 4-7,13-16, various water properties are sensed/measured and sensed values are used by the controller to control flow rates of raw water, flow rates of the

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water being distributed to end use points, amount of current applied to the electrodeionization device and other system parameters (col.11, l. 32-59, et. Seq..).

For claims 6,16, see distribution or distribution system through downstream 2<sup>nd</sup> EDI unit and/or ion exchange equipment.

For claims 1-16, the system of Mani is operated below a limiting current density (column 2, lines 9-15 and lines 38-62, etc.) and that also suppresses or minimizes hydroxyl ion generation (see column 5, lines 5, lines 36-39 concerning the EDI units operating so that "the extent of water splitting is fairly low..." and column 15, lines 59-62 concerning the EDI units operating in a "non-water splitting mode").

For claims 3 and 11-16, in Mani, the applied current level is maintained below a limiting current density (column 1, lines 9-37).

Claims 17-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Liang et al patent publication US2003/0089609. For independent claims 17 and 21, Liang discloses method of producing treated water and corresponding system including introducing water from point of entry and associated reservoir system (para. 30) coupled thereto [as in claims 17-21], removing undesired species/contaminants from the water by an electrodeionization type (para. 29) [as in claim 20] electrochemical device, and distributing the treated water to points of use (para 31,32). For claims 17 and 22, the electrodeionization device is operated by provided power that provides electrical current to the device [as in claims 17-22], with such providing of electrical current controlled by a controller that also controls other system parameters (para 32,34,.

For claim 21 the reservoir may be pressurized , (see para. 31).

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For claim 19, various water properties are sensed/measured and sensed values are used by the controller to control flow rates of raw water, flow rates of the water being distributed to end use points, amount of current applied to the electrodeionization device and other system parameters (para 29,32,34).

For claim 18, see distribution or distribution system (para 31) .

Claims 17-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Rela patent 6,607,668. Rela discloses a water treatment system and method comprising point of entry (14) , upstream reservoir (12), electrodeionization type [as in claim 20] electrochemical device (54) , power supply, controller (col. 10, lines 24-28 & col. 11, l. 65-67), downstream distribution system to end use point (col. 10, l.60-61), water property sensors (col. 10, l. 33-46).

For claim 21 the reservoir may be pressurized , see col. 4, l. 43-55 .

For claim 19, various water properties are sensed/measured and sensed values are used by the controller to control flow rates of raw water, flow rates of the water being distributed to end use points, amount of current applied to the electrodeionization device and other system parameters (col. 4, l 43-67, col. 10. l 28-40).

For claim 18, see distribution or distribution system through a UV sterilization module 56 at col. 10, l. 15-17.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rela patent 6,607,668 in view of Carson et al PGPUBS Patent Publicaiton US2004/0060823.

For claims 1-22, Rela discloses a water treatement system and method comprising point of entry (14) , upstream reservoir (12), electrodeionization type [as in claim 20] electrochemical device (54) , power supply, controller (col. 10, lines 24-28 &

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col. 11, l. 65-67), downstream distribution system to end use point (col. 10, l. 60-61), water property sensors (col. 10, l. 33-46).

For claims 2,8,9,12 the reservoirs may be pressurized , see col. 4, l. 43-55 .

For claims 4-7,13-16, various water properties are sensed/measured and sensed values are used by the controller to control flow rates of raw water, flow rates of the water being distributed to end use points, amount of current applied to the electrodeionization device and other system parameters (col. 4, l 43-67, col. 10. l 28-40).

For claims 6,16, see distribution or distribution system through a UV sterilization module 56 at col. 10, l. 15-17.

Claims 1-16 differ from Rela in requiring operation of the system so as to apply an electrical current below a limiting current density and while suppressing hydroxyl ion generation.

Carson et al discloses method of producing treated water and corresponding system including introducing water from point of entry and associated pretreatment reservoirs (starting at para. 9 and 27) coupled thereto, removing undesired species/contaminants from the water by an electrodeionization type (para. 31-34) [electrochemical device, and distributing the treated water to points of use (para 104 and 105 concerning “water product” and “normal product”), the electrodeionization device is operated by provided power that provides electrical current (para. 81) to the device, with such providing of electrical current controlled by a controller that also controls other system parameters (para. 81).

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For claims 1-10, the system of Carson et al is operated at a current level that suppresses or minimizes hydroxyl ion generation (para. 5,104, etc). It would have been obvious to one of ordinary skill at the time of the invention to operate the current level of the EDI device of Rela at a level that suppressed hydroxyl ion generation, as suggested by Carson et al, in order to avoid causing scaling of the EDI electrochemical device.

For claims 3 and 11-16, in Carson et al, the applied current level is maintained below a limiting current density (para 5,81,104) . It would have also been obvious to one of ordinary skill in the art at the time of the invention to limit the applied current level of the Rela EDI device below the limiting current density, as suggested by Carson et al, in order to avoid splitting of water into its hydroxide and hydrogen ions which would result in increases in quantities of entrained salts in the product water

For claims 2,8,9,12-16, see, in Rela pressurized reservoir for treated water at col. 4, l. 43-55.

For claims 4-7,13-15 and 18, various water properties are sensed/measured and sensed values are used by the controller to control flow rates of raw water, flow rates of the water being distributed to end use points, amount of current applied to the electrodeionization device and other system parameters at col. 4, l. 13-17 and col. 10, l. 28-44.

For claims 6,16 and 18, see distribution or distribution system at col. 4 l. 15-17.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Smith patent 6,908,546 is of interest with respect to a water treatment system having pressurized reservoirs for both the raw and treated water, a



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complex monitoring and controlling arrangement and means for distributing the treated water to a plurality of end use points.

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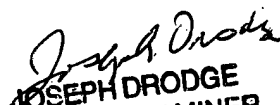
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Drodge at telephone number 571-272-1140. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can be reached at 571-272-1151. The fax phone number for the examining group where this application is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or Public PAIR, and through Private PAIR only for unpublished applications. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JWD

February 16, 2006

  
JOSEPH DRODGE  
PRIMARY EXAMINER